

Picture Planner: A Cognitively Accessible Personal Activity Organizer

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Closing the Gap 2007

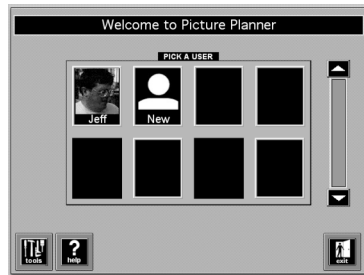
Development Goals

1. Understanding elements of interface design that enhance cognitive accessibility.
2. Research on implementation and impact of information technology use
3. Design of additional life skills software applications to enable persons with cognitive disabilities to manage various aspects of daily life.
4. Design for two end user groups: individuals with cognitive disabilities *and* caregivers/assistants.

Designing for Cognitive Accessibility

- Single click environment
- Clean interface with limited controls
- Tri-modal icons
- Individually customizable icons
- "Hub and spokes" navigation vs. tunneling
- Management of graphic transitions
- Metacognitive design approach
- Artificial Intelligence potential

Picture Planner

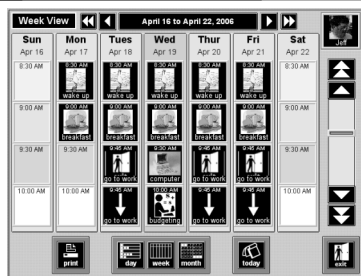


Single User Log-in

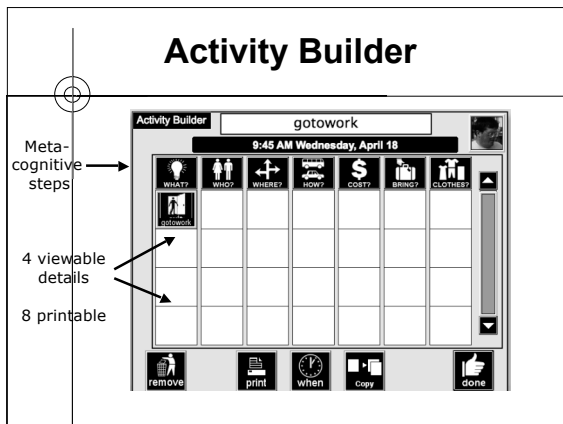


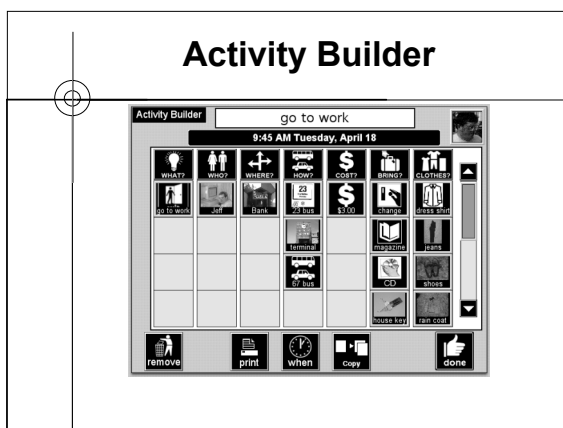
Week View

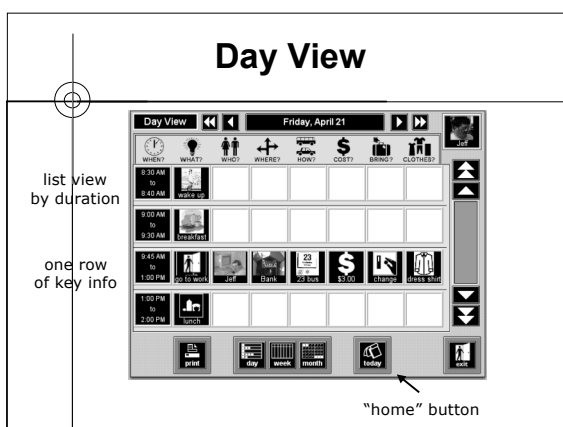
Gradient
Shaded rows



Limited set of tri-modal tool buttons







"When" details

go to work

What time does it begin? 9:45 am

What time does it end? 1:00 pm

Start on What Date? Tuesday, April 17, 2007

Reminders? Remind 15 minutes ahead

☒ Repeat for 4 weeks, on Sun Mon Tue Wed Thu Fri Sat

Schedule Summary
Each Tue, Thu and Fri from 9:45 am to 1:00 pm for 3 hours and 15 minutes, from April 17 through May 11

cancel done

Persistent Pop-Up Reminders

Reminder: meeting

Tuesday, October 2

3:55 PM

meeting

done

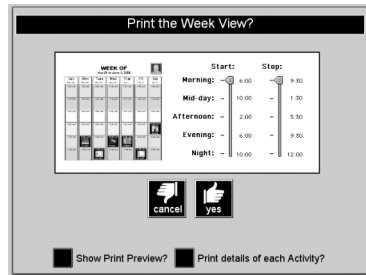
Month View

Month View April, 2006

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

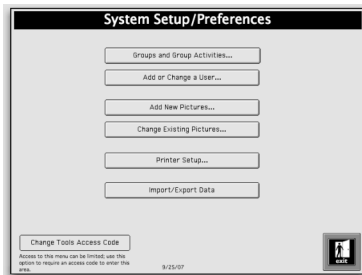
print day week month today undo

Print Dialog



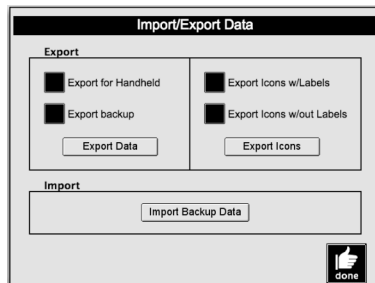
The screenshot shows a 'Print the Week View?' dialog box. It features a small calendar grid on the left. On the right, there are time range selectors for Morning (6:00-9:30), Mid-day (10:00-1:30), Afternoon (2:00-5:30), Evening (6:00-9:30), and Night (10:00-12:00). Below these are 'cancel' and 'yes' buttons. At the bottom, there are two checkboxes: 'Show Print Preview?' and 'Print details of each Activity?'.

Admin Tools



The screenshot shows the 'System Setup/Preferences' window. It contains several buttons: 'Groups and Group Activities...', 'Add or Change a User...', 'Add New Pictures...', 'Change Existing Pictures...', 'Printer Setup...', and 'Import/Export Data'. At the bottom left, there is a 'Change Tools Access Code' button and a small text box with a warning. At the bottom right, there is a small icon of a person.

Backup and Exporting Utility



The screenshot shows the 'Import/Export Data' window. It has two main sections: 'Export' and 'Import'. The 'Export' section has four checkboxes: 'Export for Handheld', 'Export backup', 'Export Icons w/Labels', and 'Export Icons w/out Labels'. Below these are 'Export Data' and 'Export Icons' buttons. The 'Import' section has an 'Import Backup Data' button. At the bottom right, there is a 'Done' button with a thumbs-up icon.

Demonstrations

- Picture Planner desktop version (XP and Mac OS X)
- Windows Mobile 5 PDA version

Implementation Research

- Students aged 16-21 with mild to moderate intellectual disabilities such as mental retardation, autism, traumatic brain injury, cerebral palsy (N= 28)
- Two secondary school community transition/apartment living skills programs:
 - One large urban school district
 - One mid-size district
- Range of qualitative and quantitative outcome measures
- Usability factors both for students and assistants

Findings

- The gap between available technology and its implementation is significant and formidable.
- There are implementation challenges with even the seemingly simplest of technologies; e.g. awareness, staff training, community settings, technical support.
- Time and schedule management are central to life skills because they're key to intensity of supports, vocational success, and level of independence in adult settings.

Findings

- Surprising levels of independent skill, depending on technology design and entry skills: 54% independence with 8 weeks of 1/2 hr. instruction (Moral: Get in the game)
- Independence is great but not the Holy Grail: Software design should address staff support factors (e.g. level of skill, assisted use, usability)
- Accessible software applications can be important tools for development of self-management and self-determination (choices = control)

Further Development

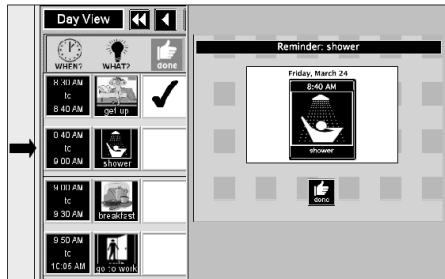
Need for range of personal management tools:

- Communication
- Budgeting
- Community event awareness
- Activity sampling and choice expression
- Household management
- Task prompting
- Personal well-being and awareness

Sample Intelligent Features

- Clothing selection: Facilitation of clothing selection based on current weather, forecast, and social context of activity.
- Automatic transition time calculation: Estimation of time needed between scheduled activities based on location, history, or external input.
- Intuitive choice prediction: Elimination of selection options based on the what, where, and who details of the activity
- Travel planning: Integration of a "Point A to Point B" mass transit schedule and trip advisor data.
- Context aware reminding: Smart activity and task prompting based on user location.
- Data reporting and sharing: Shared calendar information and social networking features.

Tie-In to Smart Prompting Environments



Next Steps

- Web/network-based delivery and technical support
- Smart phone integration
- Integration with residential support technologies for self-management and caregiver assistance

Contact Information

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